Applicants thank the Examiner for suggesting that Applicants respond to the current Office Action, with respect to the Examiner's inherency argument, with an example of a magnetic thin film that meets the Ra of Nishikawa, but does not meet the SRa range required by the instant claims, and/or provide evidence establishing the criticality of the claimed SRa. As noted in the attached Rule 132 Declaration of Masakazu Nishikawa (hereinafter "Nishikawa Dec."), Applicants have provided both.

The present invention relates to a master information carrier having on a surface thereof an irregularity pattern representing information to be magnetically transferred to a magnetic recording medium. The parts of the surface which are brought into contact with the magnetic recording medium have a center plane mean surface roughness SRa in the range of 0.3nm to 10nm. With the above features, defective contact between the master information carrier and the magnetic recording medium is reduced or prevented. Non-uniformity in transferred magnetization and deterioration in linearity of transferred magnetization is also reduced or prevented. As a result, excellent transfer recording properties can be obtained.

Difference between SRa and Ra

As set out more fully in the Rule 132 Declaration of Masakazu Nishikawa, and Fig. 1 attached thereto, the center plane mean surface roughness (SRa) of the present invention represents the mean surface roughness in two (2) orthogonal directions (two dimensional plane), whereas the mean surface roughness (Ra) of Nishikawa '306 represents the mean surface roughness only in one direction (circumferential direction). (Nishikawa Dec., pg. 2, lines 8-11). As such, an SRa and an Ra would be the same only if the roughness of the surface

of the master information carrier is uniformly distributed in both orthogonal directions. (Nishikawa Dec., pg. 2, lines 12-13). However, this situation is unlikely to occur because the surface roughness of a master information carrier is governed by how the original plate of the master information carrier is formed. (Nishikawa Dec., pg. 2, lines 13-15). Accordingly, the direction in which drawing is made on the resist, and the manner in which the pattern is formed on the Si substrate during the etching process which forms the original plate, affect the surface roughness. (Nishikawa Dec., pg. 2, lines 15-17). Therefore, the roughness of the surface of the master information carrier is not uniform, and, as such, SRa and Ra cannot be same. (Nishikawa Dec., pg. 2, lines 17-19).

As shown in Fig. 1 of the Appendix attached to the Declaration of Masakazu Nishikawa, assuming the direction of the X-axis is circumferential, then Ra is 0.0 nm. (Nishikawa Dec., pg. 2, lines 20-21). On the other hand, if the direction of the Y-axis is in the circumferential direction, then Ra is 2.5 nm. At the same time, however, the SRa is 1.25 nm. (Nishikawa Dec., pg. 2, line 21 - pg. 3, line 1). Therefore, the Ra of Nishikawa '306 and the SRa of the present invention are clearly different from each other. (Nishikawa Dec., pg. 3, lines 1-2).

The Advantage of Forming Roughness on the Upper Surface of Protrusion Patterns

Nishikawa'028 is silent with respect to whether the surface of the data area and the upper surface of the protrusion patterns are rough. (Nishikawa Dec., pg. 3, lines 4-5). On the other hand, Nishikawa '306 teaches that the surface of the data area is rough, but there is no description regarding whether the upper surface of the protrusion patterns is also rough.

(Nishikawa Dec., pg. 3, lines 5-7). Therefore, even if Nishikawa '028 and Nishikawa '306 are combined, there is no disclosure, teaching or suggestion for making the upper surface of the protrusion patterns rough. (Nishikawa Dec., pg. 3, lines 7-9). In other words, in this asserted combination, the upper surface of the protrusion patterns would be smooth (see Fig. 3 attached to the Declaration of Masakazu Nishikawa). *Id.*

On the other hand, regarding the present invention as illustrated in Fig. 2 of the attached Declaration of Masakazu Nishikawa, the rough upper surface of the protrusion patterns is not obvious with respect to the asserted combination of Nishikawa '028 or Nishikawa '306. (Nishikawa Dec., pg. 3, lines 10-12). This is a critical distinction because employing a rough upper surface of the protrusion patterns prevents the deterioration in transferred signals. (Nishikawa Dec., pg. 3, lines 12-14).

When the slave medium is brought into contact with the master information carrier, the lubricant, which is usually used when bringing the slave medium and the master information carrier into contact with each other, adheres to the master information carrier. (Nishikawa Dec., pg. 3, lines 15-17). The attachment of the lubricant to the master information carrier can cause a deterioration in transferred signals. (Nishikawa Dec., pg. 3, lines 18-19). For example, in Nishikawa '028 and Nishikawa '306, the upper surface of the protrusion patterns is smooth, and there are no grooves (see Fig. 3 of the attached Declaration of Masakazu Nishikawa) into which the lubricant can flow. (Nishikawa Dec., pg. 3, lines 19-21). Therefore, the lubricant remaining on the smooth surface of the protrusion patterns acts to prevent the master information carrier from being brought sufficiently close to the surface of

the slave medium. (Nishikawa Dec., pg. 3, line 21 - pg. 4, line 2). This causes transfer magnetization defects and deteriorates the quality of signal transfer. (Nishikawa Dec., pg. 4, lines 2-3).

On the other hand, with respect to the present invention, the lubricant which adheres to the master information carrier flows into the grooves (the rough portions) of the upper surface of the protrusion patterns (see Fig. 2 of the Declaration of Masakazu Nishikawa). (Nishikawa Dec., pg. 4, lines 4-6). As such, the surface of the master information carrier and the surface of the slave medium can be brought sufficiently close to each other to eliminate the conditions which create deterioration in the transferred signals. (Nishikawa Dec., pg. 4, lines 6-8). Therefore, deterioration in transferred signals is prevented by employing the rough portions on the upper surface of the protrusion patterns in the present invention. (Nishikawa Dec., pg. 4, lines 8-9).

Neither Nishikawa Reference Discloses, Teaches or Suggests the SRa of the Present Invention

Nishikawa '028 teaches that a metal thin film formed on a substrate of a master medium is electrically grounded such that any charge which would have been transferred to the master medium is removed. This reduces the amount of adhering dust which reduces or prevents insufficient contact between the master medium and a slave medium. Nishikawa '028 neither discloses nor suggests the center plane mean surface roughness (SRa) of the master information carrier being in the range of 0.3nm to 10nm.

Nishikawa '306 discloses a master carrier having servo areas where magnetic transfer is to be performed, and data areas, where magnetic transfer is not to be performed. Both areas are

on the same side. Nishikawa '306 also teaches that the average surface roughness (Ra) of the data area is set to be in the range of 0.1-5nm in order to prevent generation of air gaps between the master carrier and the slave medium when the master carrier is tightly fitted to the slave medium and to also enhance detachment or peeling off of the slave medium from the master carrier.

It is true that the numerical range of 0.1-5nm for the average surface roughness (Ra) of Nishikawa '306 overlaps with the range of 0.310nm for the center plane mean surface roughness (SRa) of the present invention. However, as described in detail above, and as set out in the Rule 132 Declaration of Masakazu Nishikawa, the technical concept of SRa of the present invention is completely different from the technical concept of Ra of Nishikawa '306.

Nishikawa '306 first attempts to bring the data areas, as well as the servo areas, of the master carrier into close contact with the slave medium to improve the durability of the servo areas, under the premise that, in terms of the operability of the magnetic transfer, it is merely sufficient for only the servo areas of the master carrier to be brought into close contact with the magnetic recording medium (i.e., the slave medium). On the other hand, it is not necessarily required for the data areas to be brought into close contact with the slave medium. Nishikawa '306 then provides **only the data areas** with the average surface roughness (Ra).

In contrast, in the present invention, the center plane mean surface roughness (SRa) is provided **over all surface parts of the master information carrier which are brought into contact with the magnetic recording medium**, including not only the protruding portions of the irregularity pattern on the surface of the master information carrier but also a part which is

not provided with the irregularity pattern but brought into contact with the magnetic recording medium. This represents a significant and non-obvious difference between the SRa of the present invention and the Ra of Nishikawa '306.

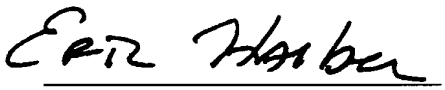
Further, the invention of Nishikawa '306 is a result of addressing the problem involved in bringing a master carrier having **a flat surface without an irregularity pattern on the surface** thereof into close contact with a magnetic recording medium. This is not the same problem addressed by the present invention. Accordingly, this also represents a significant difference between the present invention and Nishikawa '306, In this respect, the "grooves" on the surface of the master carrier of Nishikawa '306 as referred to by the Examiner merely function to prevent generation of air gaps and are **not at all equivalent to the irregularity pattern**, as recited in Claim 1, which traps lubricant.

Given the above, it is clear that neither reference, either alone or in combination, provides any motivation to combine the teaching of Nishikawa '028 in which the master carrier has an irregularity pattern on the surface thereof with the teaching of Nishikawa '306 in which the master carrier has a flat surface. In view of the above, Applicants believe that claim 1 is patentable over the asserted combination of Nishikawa '028 and Nishikawa '306. Further, since Claims 2-13 depend from Claim 1, these claims are also patentable for the same reasons.

In view of thé above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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